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Descriptors-*Classroom Observation Techniques, Curriculum Development, Educational Theories, Inservice Teacher Education, Research Criteria, Teacher Education, Teacher Supervision

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The first of the five papers in this booklet, "Using Systematic Observation and Analysis of Teaching" by Bob Burton Brown, presents suggestions for the development of inservice education programs to train school staff members in the use of observational systems and lists suggested uses of such systems. In "Theoretical Bases of Observational Systems" John M. Newell and Bob Burton Brown discuss three different theoretical approaches which have influenced the development of observational systems and then describe the development of the Teacher Practices Observation Record (TPOR), a system using Dewey's theory of experimentalism as a theoretical framework. Leonard Kaplan's "Building Observational Systems" presents criteria for use in developing an observational system and illustrates their use in the development of the Florida Taxonomy of Affective Behavior in the Classroom. Athol B. Packer chooses the Florida Taxonomy of Cognitive Behavior, the TPOR, and the Reciprocal Category System (RCS) to illustrate "Using Systematic Classroom Observation Instruments for Curriculum Building." The final paper by Daniel A. Michalak, Robert S. Soar, and Robert E. Jester, "Systematic Observational Tools as Feedback for Teachers in Modifying Their Classroom Behavior," reviews literature and research to compare traditional and emerging models of the student teacher supervisory conference. (JS)

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SYSTEMATIC OBSERVATIONS: RELATING THEORY AND PRACTICE IN THE CLASSROOM

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FOREWORD

This report is based upon papers presented in an AERA symposium at the national conference in Los Angeles, February 1969. The report presents one facet of the work of the Institute for Development of Human Resources, an interdepartmental research agency of the College of Education, University of Florida. The Institute for Development of Human Resources is interested in research on systematic observation not only from the point of view of methodological studies, but also as a way of linking theory and practice. The Institute's Follow Through Assistance Program (described in a separate Report edited by Gordon) uses systematic observation as a key element; the Follow Through Evaluation Program, under the direction of Professor Soar, extends systematic observation as a technique for evaluating across different approaches to innovation; the Institute's program of in-service teaching and evaluation for Florida's schools, under the direction of Professor B. B. Brown, represents another direct attempt to influence educational practice.

The Institute for Development of Human Resources is a voluntary association of faculty who are interested in programmatic research in both the basic and applied realms, and who seek ways to foster such research in a climate offering considerable freedom to the individual researcher as well as participation in team efforts. This Report is a demonstration of that orientation.

I wish to thank both the professional and clerical staffs of the Institute for Development of Human Resources and Dean Bert Sharp of the College of Education for their efforts in making this publication possible in a minimum amount of time.

Ira J. Gordon, Director

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USING SYSTEMATIC OBSERVATION AND ANALYSIS OF TEACHING

Bob Burton Brown

Systematic observation and analysis of classroom behavior represents an exciting new tool for the improvement of teaching. Used with rapidly increasing frequency in educational research during the last ten years, we now have a number of proven observational instruments which are now ready for wide-scale use in the public schools.

When the use of observational systems was limited to only a small handful of specially trained researchers, it was naturally very expensive. Likewise, some of the observational systems developed for research purposes were far too complex (particularly the procedures for analyzing the data) for use in the day-to-day operation of the schools. Now, however, we have a number of comparatively simple systems which are proving to be much more practical. Likewise, we have developed techniques for training relatively large groups within a short period of time, which greatly reduces costs.

There are several important considerations to keep in mind in the development of in-service education programs based on observational systems:

1. Choose more than one system or instrument.
2. Concentrate initial training on leadership of the school.
3. Train the leadership of the school subsequently to train every teacher in the school in the use of the observational instruments.

Why more than one instrument? A given observational system structures and disciplines the analysis of teaching along some necessarily limited dimension--otherwise it would not be systematic. It concentrates

or focuses sharply on selected aspects of the teaching situation, thereby permitting a depth far greater than that of superficial observations which consider everything and nothing. No one system can do it all. It takes several systems to provide both depth and breadth of analysis.

Contrary to what one might suspect, teachers are able (and willing) to learn several different systems much better than a single system. Training in several systems seems to reduce apprehension and hostility aroused when too much emphasis is placed on the limited view of the classroom provided by any given single system. For the same reason, it is important that more than one philosophy or viewpoint with respect to the purpose of education be represented by the several instruments selected. Once a first observational system is learned, subsequent systems come easy, and serve to complement one another.

Do not have outside or imported experts train classroom teachers directly. Get the greatest possible mileage from high-priced training consultants. Train your best qualified "permanent" personnel--supervisors, principals, department heads, key teachers first. Then, have them, in turn, train others--after the experts in the system have gone home. Besides, if the administrators do not take leadership responsibility for systematic observations, they will sabotage the whole program before it gets to first base.

Likewise, no observational system should be "used on" teachers. Classroom teachers should themselves be trained in a system prior to its use in analyzing their teaching behavior. Their full participation in the program is essential to success.

Once a local school staff has been trained in several observational systems, these systems can be used to deal with a number of

persistent problems:

1. Staff Development and Improvement
2. Staff Utilization
3. Differentiated Staffing
4. Staff Evaluation
5. Curriculum Development
6. Behavioral Objectives
7. Systems Development
8. Development of Instructional Theories

The meaningful feedback provided by observational systems is essential to the analysis and improvement of teaching. No staff development program can get very far without it.

Wide-scale use of observational systems requires a new concept of staff utilization, a remodeling and upgrading of supervisory practices. Not only must supervisors and principals spend more time in classrooms, teachers must observe each other (peer supervision) and, above all, observe themselves (self-supervision).

The relative strengths and abilities of teachers can be identified through systematic observations to provide information needed to move into differentiated staffing. Likewise, such information also serves as the basis for teacher evaluation. It simply is not possible to evaluate teacher competence fairly and meaningfully without first obtaining accurate and reliable descriptions of the teacher's classroom performance.

Until recently the potential of systematic observations for influencing improved curriculum planning has been completely overlooked. At the University of Florida we have used the Teacher Practices Observation Record useful as a guide in developing curriculum materials designed

to engage Follow Through youngsters in reflective thinking and inquiry. Likewise, the Florida Taxonomy of Cognitive Behavior has proven useful in creating materials and methods which upgrade the intellectual level of classroom activities.

Observational systems represent a structured short-cut to the establishment of behaviorally stated objectives. Actually the items and categories of most systems are nothing more or less than behavioral objectives, or frameworks on which highly specific behavioral objectives are easily developed.

Once teachers have mastered several available observational systems and have used them to deal effectively with the array of problems just cited, they are likely to want to try their hand at the development of their own observational systems. Staff-made systems can be used to study highly detailed aspects of teaching which are untouched by established systems, enabling observational feedback to focus on local needs and interests. This activity inevitably leads to a re-examination of old instructional theories and the development of new ones.

Trying to build an observational instrument for some specific instructional theory certainly exposes the strengths and weaknesses of that theory. Theories which are merely vague generalizations usually defy statement in behavioral terms. However, if behavioral items or categories can be developed, they succeed in bringing greater clarity and meaning to our instructional theories.

THEORETICAL BASES OF OBSERVATIONAL SYSTEMS

John M. Newell and Bob Burton Brown

The development of observational systems has been influenced by three different theoretical approaches: (1) items of the behavior and/or characteristics of teachers are operationally defined, without reference to any theoretical framework, or (2) items are fitted into a supposedly value-free framework that is socio-psychologically oriented, or (3) items are selected with respect to agreement-disagreement with some stipulated philosophy or value system.

Ryans' (8) Classroom Observation Record is an example of the trend to define operationally the characteristics of teachers and their behavior without offering any clearly stated theoretical framework. Other examples of this approach are found in the work of Jayne (5) and Morsh (6). The observational systems developed by Withall (10), and Flanders (2) and Ober (7) are examples of the socio-psychological orientation to instrument development. The systems developed by Harvey (4) and Brown (1) are examples of observational instruments with definite philosophical orientation developed for the purpose of studying the influence of beliefs on behavior. We shall return to the work of Brown later in this presentation.

One of the principal reasons attempts are made to design observational systems without benefit of a foundational theory is the desire to establish "objectivity" or "scientific purity." However, no observational system can possibly record all, or even most, classroom behaviors at the same time. Selections must be made. There must be some basis for making decisions about which items of behavior to include or exclude. Such a basis, like it or not, good or bad, explicit or implicit, represents a theoretical point of view.

Since an observational system must include some basis for making decisions about which behaviors to look at, it is our position that there is much to gain from using an explicit theoretical base. Likewise, we are not content to settle for some generalized socio-psychological theory such as "pupil-centered vs. teacher-centered," or some generalized philosophical theory, such as "traditional vs. modern." Instead, we prefer that systems be developed directly on some specific theory such as Gagne's Conditions of Learning (3) or Dewey's philosophy of experimental inquiry.

Of the several values and assumptions associated with the development of observational systems, the most common is that systematic observational systems must be "objective" or "value-free." Although systematic observations do furnish highly informative "descriptions" of classroom behavior, they are not objective in the sense that they represent "true facts" or that the observer is not making judgments. This value of "objectivity" is of particular concern when systematic observational systems are developed from a theoretical base. When an observer chooses to explore classroom behavior in terms of one theory rather than another, he has lost his "objectivity." The very nature of the theory used as a framework dictates that certain behaviors will receive greater attention and certain categories of behavior may not be included at all. Observational systems developed from theoretical frameworks are not limited to a mere description of the classroom behaviors; they measure whether or not the teacher being observed adheres closely to the particular theoretical system. Such observations provide a definite basis for eventual evaluation, which enhances the usefulness of the data yielded by the instrument.

With the exception of those observational systems that represent

a random hodgepodge of items from several existing observational systems, and such collections of items do exist, any systematically developed observational technique probably has some conceptual base. Again, we would ask the question, "Why are some items included while other possible items are excluded?" In general, the atheoretical-theoretical dimension is not a dichotomy. In many cases, the conceptual framework on which an observational system is based may not be spelled out. The more visible the conceptual base of an observational system, the more systematic, in terms of logical structure, it is likely to be. While one should not reject an observational system merely because its conceptual framework is not explicitly stated, if, after a careful examination of the items, no coherent and meaningful conception can be found, perhaps rejection of an observational system is then justified.

Items developed from a theoretical base must be logically consistent with the theory. It takes considerable skill and effort to formulate operational definitions of relevant behaviors and to build a system which adequately reflects the theoretical framework. The translation of a theoretical statement into one or more observable items is the first, and often most difficult, task in instrument development. Not all statements in a theory are of equal importance. As the work of Sanders (9) using the cognitive taxonomy has indicated, not all questions are of equal consequence and the observational system must reflect the relative value of different statements included in the theory.

A systematic observational system developed from a theoretical base must be comprehensive in scope. The observational system must include a sufficient number of items to reflect all of the central aspects of the theory. One of the major values of developing an observational system from a theoretical framework is that this framework provides a

guide to the system developer as to what areas must be included in the system.

The remainder of this presentation will focus on two quite different theoretical frameworks as a basis for the development of a systematic observational system. An observational system has already been developed from the first of the two theories to be discussed. No such observational system has yet been developed from the second theory. It is hoped that a comparison of the work done using these two theories will reflect both the steps as well as the difficulties inherent in the development of a systematic observational system from a theoretical framework.

The first theory, Dewey's theory of experimentalism, has been used by Brown (1) to develop the Teacher Practices Observational Record (TPOR). This system is designed to reflect agreement or disagreement with the teaching practices advocated by Dewey. That is, items are included which reflect not only agreement with the philosophical tenets of experimentalism but also behaviors which reflect disagreement with this philosophical position. The other theoretical framework is that of Gagne as reflected in his book Conditions of Learning (3). Gagne argues that we should focus on what is known about the various underlying conditions of learning, rather than any single theory of learning, in developing specific instructional procedures to be used in the classroom.

The development of the Teacher Practices Observational Record (TPOR) is discussed in detail in Brown's book, The Experimental Mind in Education (1). From an analysis of the writings of Dewey, Brown extracted two broad categories: (1) Fundamental philosophical beliefs and (2) Educational beliefs. The first category was subdivided into

six areas: (a) Mind and body; (b) Permanence and change; (c) Science and morals; (d) Emotions and intellect; (e) Freedom and authority; and (f) Knowing and doing. The area of Educational Beliefs was subdivided into seven categories: (a) A situation of experience; (b) A problem develops; (c) Ideas are generated; (d) Observations are made, data is collected; (e) Hypotheses are reasoned out; (f) Experimental applications and tests are made; and (g) Conclusions are evaluated and reported.

These two sets of categories were then developed into three instruments. The philosophical beliefs were reflected in the Personal Beliefs Inventory while the educational beliefs were used to develop both the Teacher Practices Inventory and the observational instrument, the Teacher Practices Observational Record (TPOR). It is only with the last instrument, the TPOR, that we will be concerned here. Pairs of items were developed, one of which reflected agreement with each of the seven categories listed while the other item reflected disagreement with that category. For example, under the category "Situation of experience," the item "Teacher makes student center of attention" is seen as being in agreement with Dewey's philosophy while the item "Teacher makes self center of attention" is viewed as being in disagreement with the philosophy of Dewey. A series of sixty-two items were developed in this manner and constitutes the items for the TPOR. Brown has used the TPOR in measuring the classroom behavior in thousands of observations of classroom behavior across the nation.

There is a "new" look in learning theory that holds every promise of providing a much needed link between learning theory and classroom practice. This approach has been developed most fully by Robert Gagne in Conditions of Learning (3). Gagne argues that, "There are no general

rules of learning known at present that can be used as guides in designing instruction" (3). Gagne chooses to focus on various conditions of learning which are not tied to any single theory of learning but which reflect what is already known from several theories of learning. The immediate value of such an approach is that Gagne has provided a framework within which we may be able to translate principles of learning into observable teacher behaviors which can serve as the basis for the development of a systematic observational system. As indicated earlier, no observational system exists which has been developed from Gagne's conceptual framework. Using the procedures which were very briefly outlined in describing the work of Brown on the TPOR, let us examine what steps might be taken to begin to develop an observational instrument based on the work of Gagne.

Gagne analyzes the various conditions of learning into two major categories, the "internal" and the "external" events of instruction. He states that, "Control of the external events in the learning situation is what is typically meant by the word 'instruction'" (3, p. 215). Since we are interested in the visible instructional activities of the teacher, those areas under the heading "external events" may well provide us with the nucleus from which an observational system could be developed. Gagne lists three broad headings under external events: (a) Control of the stimulus situation; (b) Verbal communication; and (c) Control over feedback to the student. For purposes of illustration, we shall focus on the second of the external events, verbal communication. Gagne further subdivides this category into: (1) Directing attention; (2) Conveying information about expected performance; (3) Inducing recall of previously learned entities; and (4) Guidance in learning by discovery. As one can

see, we are attempting to use the specific conceptual statements contained in Gagne's book to develop specific behaviors which relate logically to the theoretical statements. Let us now focus on "Conveying information about expected performance" for further illustration.

In discussing the conveying of directions to learning, Gagne states, "This may mean that they (students) establish a <u>set</u> which is 'carried in his head' by the learner throughout the period of learning, and which makes it possible for him to reject extraneous and irrelevant stimuli (3, p. 221). At this point, several items probably should be developed and tested to see if they, in fact, will reflect the intent of the above statement. Following the lead of Brown, we may want to develop pairs of items, one of which reflects a teacher behavior designed to elicit this "set" while another item reflects a teacher behavior which does not elicit this "set." An item, "Teacher defines final goal of the learning behavior" may be useful in our observational instrument. Initially we may wish to be even more specific in item development. We could use such items as "Teacher provides written outline of material to be learned" or "Teacher describes verbally the material to be learned."

Anyone who has attempted to develop an observational system is aware that many more items are developed than will be contained in the final instrument. The items need to be analyzed from several points of view. First, is the item logically consistent with the theoretical statement? We should check our items against what is known from research about "set." Do any of the items developed for this area contain statements which logically contradict what is known about "set?" Do we have enough items to adequately cover all of the major aspects of our theoretical framework? Have we provided more items for those aspects of the

theory that are central while allowing for fewer items to reflect the more peripheral aspects of the theory? Finally, is each item sufficiently clear so that observers can use it with a high degree of reliability in observing in the classroom? Work is being done at the University of Florida to develop an observational instrument based on the work of Gagne.

This presentation cannot be concluded without pointing out an important value of developing an observational instrument based on a theoretical framework. The work of Brown in developing the TPOR revealed that there were some aspects of Dewey's theory that did not appear to hold up logically or that could be described operationally while other aspects of the theory yielded to item development without difficulty. The development of an observational instrument is one way, a very important way, of analyzing the value and utility of the theoretical statements. Logical inconsistencies and lack of comprehensiveness are likely to appear in such an exercise. Finally, the availability of such an observational instrument allows the observer to clearly analyze the degree of consistency of a teacher's instructional behavior in terms of a given educational theory.

Over the years the amount of interest paid to systematic observation instruments has varied from almost total lack of concern to a rather concentrated effort to develop and use these systems. In years past when observational systems were regarded almost exclusively as research tools, great pains were taken to avoid any reference to specific theories of teaching and learning. At that time there seemed to be no practical use for such instruments and their importance was not highly regarded. Recent interest in systematic observations was stimulated,

in part, by attempts to develop systems from socio-psychological theories, such as those used by Withall (10) and Flanders (2). However, such theories are limited to very narrow and highly specialized aspects of classroom behavior. At the University of Florida we are concerned with taking the development of systematic observations one step further by utilizing theoretical frameworks which have more direct application to the direction and improvement of instructional techniques and materials.

We do not wish to rely on any single, all-embracing theory. Instead we are devoted to the development of multiple systems, each based on a different and differing theory. For example, we now have completed or are working on a wide variety of observational systems based on such theories as:

1. Dewey's Philosophy of Experimentalism
2. Bloom's Cognitive Taxonomy
3. Krathwohl's Affective Taxonomy
4. Gagne's Conditions of Learning
5. Piaget's Cognitive Developmental Theory
6. Herbart's Theory of Instruction
7. Children's Use of Language
8. Sylvia Ashton-Warner's Key Vocabulary
9. Imagery Stimulation

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BUILDING OBSERVATIONAL SYSTEMS

Leonard Kaplan

INTRODUCTION

Teaching has, in the past few years, been receiving close inspection unparalleled in the history of American education. Few educators would deny the existence of teacher preparation, but many have voiced alarm regarding the objectives and procedures of this program. This dialogue is most evident as it applies to how teachers should be evaluated.

In an informal survey conducted by Kaplan, Young, and Schreiber (1966) it was discovered that the evaluation of teacher competency is, in a large majority of cases, conducted by a supervisor, usually untrained in the objectives and mechanics of teacher evaluation, sitting in the rear of a classroom busily taking note of those items considered worthy of discussion at a later date. This form of evaluation leaves much to be desired as it tends to generalize about teaching behaviors and therefore becomes vague and confusing to the teacher and/or prospective teacher.

A major barrier to change is a lack of systems designed to locate teaching behaviors and focus in on them empirically from the systems that have been developed and these are very few. It is quite apparent that no one system in itself is all inclusive and can do the total job. Therefore it seems that if we are ever to understand teaching and the multiple variables contained within, additional systems will need to be developed.

The direction of this paper is two-fold: first, to provide some criteria for those who will see the necessity of developing observational systems and second, to illustrate how these criteria were used in the development of the Florida Taxonomy of Affective Behavior in the Classroom.

1. What is an observational system?

A classroom can be studied from a variety of vantage points, and behavior contained within this classroom can also be examined in this manner. Gordon (1966)[1] suggests that a classroom can be viewed in an ecological manner. He suggests as bird-watchers observe birds doing what birds do, that teachers and children can be observed doing what teachers and children do. It, therefore, seems reasonable to assume that a classroom is observable. As of this writing I have not really watched birds. However, it would seem rather obvious that if I were to begin it would be to my advantage to direct my looking and listening. For example, I might pay attention to the bird's coloring or eating habits or song or a host of other behaviors; however I would not just look and/or listen. We must pay attention to the individual parts before we can hope to identify the whole being. It is from this rationale that observational systems developed. An observational system is a way of identifying, ordering, and classifying behaviors for the purpose of examination, study, and evaluation. It permits an observer to look at specific behaviors of teaching and learning and react to them accordingly or as the objectives stated for the lesson or classroom would suggest.

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[1] Ira Gordon, Pg. 90. Studying the Child in School, John Wiley and Sons, New York. 1966.

2. What do you want to measure?

Before specific behaviors can be identified, it is necessary for the researcher to determine the purpose of the study. Kaplan (1968) was interested in describing what affective behaviors teachers and children exhibited and therefore was able to disregard other behaviors that may be present but irrelevant to his observational instrument. He was able to ignore the cognitive, psycho-motor and other aspects of classroom behavior since he was not dealing with them in his investigation.

Once the purpose or focus of the study has been identified it then becomes a matter of selecting the appropriate behaviors and fitting them into categories that can be used and manipulated by the observer. It is imperative that each behavior selected be observable. This suggests that the behavior is clearly and operationally defined and that the observer has been sufficiently trained to identify and code its occurrence. Too often a written behavior is vague and the observer is forced into guessing whether or not the behavior was in evidence. Any observational schedule that is not specific in its behaviors is subject to question and causes doubt as to its reliability and usage.

3. Coding behavior

The judgment of the observer as to whether or not a specific behavior occurred is crucial. It, therefore, becomes the responsibility of the instrument developer to design his schedule in such a manner that each behavior is easily recognizable and can be scored quickly. The observer should not be required to weigh or rate any of the behaviors on a quantitative scale, but rather make qualitative judgments as much as possible. Suppose, for example, that an observer is using a system

for categorizing teacher value statements. When he hears a statement that could be classified as a value, he might be asked to use one tally (+) for a mild statement and another tally (-) for a more severe statement such as a teacher trying to convince a child to accept her value position as opposed to the teacher mentioning another value position. Since this is really two categories of valuing, it would be more appropriate to use two categories of valuing rather than one. In this way each value statement can be examined on its own and should be tallied in its own space. By using this system it is possible to obtain more information within this category and thereby yield more significant results afterwards. In addition, this specificity reduces the amount of quantitative judgments required of the observer. It is for this reason that an observer will need to record his judgments quickly and accurately. This can be done if the observer has been properly trained in the use of the instrument and is completely familiar with the specific behaviors and categories contained within the system.[2]

4. Training observers

An observational system must be usable. That is, it must be able to be used quickly with ease and serve a purpose for the user. Therefore, observer reliability must be insured. To secure this reliability the researcher will need to train observers in the use of his instrument. Such training should include the following considerations:

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[2] For further insight the reader is advised to read "Measuring Classroom Behavior by Systematic Observation." Donald Medley and Harold Mitzel. Handbook of Research on Teaching. Chapter 6. American Educational Research Assoc., 1963. Pp. 247-328.

(a) The purpose of the investigation. Each observer should be fully aware of why this investigation is being undertaken and, in addition, his role in the project. Without the complete understanding and cooperation of each participant the possibility of incomplete or "garbage" data is present. Whether or not the study is significant will depend on the empirical findings. The data gatherer is the primary source of this information.

(b) What is to be measured. Before an observer steps foot into a classroom he should be aware of each behavior that could occur pertinent to this system. It is suggested that a glossary be developed that defines each behavior and gives examples that will illustrate what this behavior could look like as it occurs in the classroom. As the instrument and observers gain refinement and sophistication, it will be possible to make changes in the glossary to promote further clarity.

(c) Coding. The observers will need to be trained in the mechanics of this instrument. That is, how to record each behavioral occurrence, where to put each recording, how often to record, and what these recordings represent.

The researcher is free to select appropriate people to train as observers. These observers can be students, in-service personnel, and any other group that is readily available and interested. It is up to the investigator to provide suitable materials for training. When the researcher believes that the observers are ready, that is, have studied

the material, and have used it in laboratory situations, preliminary data or pilot data may be gathered. Only after these initial steps have been taken can we make any hypotheses on the reliability of the observers and the validity and usability of the system.

5. Evaluation

How good or how effective an observational system is depends on the feedback it provides the learner. For years classroom supervisors have visited the subjective in an effort to assist classroom teachers. In essense we have talked about "what we think" or "how we feel" when evaluating teaching and learning. The purpose of the empirical study is to "tell it as it is."

Classroom teachers work with children every day. They know what they are attempting to accomplish. They know what will or will not work with their classes and with individual youngsters. It seems rather foolish to believe that on the basis of a single visit, using only biased eyes, a supervisor can evaluate instruction especially when this supervisor does not know the objectives of the teacher and the activities that have preceded the lesson.

What teachers need is evidence of what happened. From this evidence the teacher can make the judgment as to whether or not she is successful, what needs to be done, what more she could have done. The teacher makes the evaluation, not the outsider.

The Development of the Florida Taxonomy of Affective Behavior in the Classroom

A thorough investigation of the literature has produced evidence to support the notion that educational objectives can be classified

into three major domains:

1. Cognitive: Objectives which emphasize remembering as well as solving intellectual tasks.
2. Affective: Objectives which emphasize a feeling, an emotion, a value, or a degree of acceptance or rejection.
3. Psychomotor: Objectives which emphasize some muscular or motor skill, some manipulation of material and objects, or some act which requires a neuro-muscular coordination. (See Taxonomy of Educational Objectives, Bloom, Krathwohl, et al.)

Observation systems pertaining to the cognitive and psychomotor aspects of teacher behavior have been developed. Many of these instruments are now in use and are providing important data. However, there are few, if any, studies dealing with the affective domain. It is from this need that the Florida Taxonomy of Affective Behavior in the Classroom has been developed.

This system was conceived and developed in an attempt to clarify and make operational the Krathwohl taxonomy. As a research tool, Handbook II is limited in its power to assess those behaviors that can be conceived and produced under actual classroom situations. Putting it another way, it does not provide to the observer the breakdown of affective behaviors that may take place in the classroom and, in addition, does not provide the framework to note their occurrence.

The FTAB consists of five categories, each representing a hierarchy of affective behaviors. These categories are consistent with the Krathwohl model. Each category has within it those affective behaviors

that can be observed and noted. Each of these behaviors can be assigned to either teacher or student.

With the assistance of Dr. Bob Burton Brown, friend, colleague, and author of several respected observational systems (Teacher Practices Observational Record, Florida Taxonomy of Cognitive Behavior in the Classroom), each item selected was scrutinized and edited for clarity and, most of all, observability. Further editing of items was done with other colleagues and students.

The +, -, and o were selected as appropriate for scoring the FTAB. These designations fit the criteria set down for observing behaviors as developed by Medley and Mitzel in their chapter, "Measuring Classroom Behavior by Systematic Observation."[3] This method of recording was used in their Observation Schedule and Record (OScAR), and more recently used by Brown in his observational instruments.

After a great deal of editing, arguing, and more editing, the instrument was developed. (It should be noted, however, that what was considered the instrument is now in its fifth form.)

Volunteers were selected to act as trained observers. In an effort to gain a high degree of observer reliability, training sessions in the use of the FTAB were conducted. A glossary defining and giving examples of each behavior on the instrument was developed for use by the observers. After more hours of editing and arguing, the training sessions were concluded and a pilot study conducted.

Working in teams, the observers visited sixteen classrooms, kindergarten through twelfth grade. Visits to each classroom were made

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[3] Ibid.

over a period of three weeks. Each classroom was observed three times by a different team of observers. The percentage of agreement among trained observers reached a median of 97.78 per cent in observation of teacher behavior. These results would seem to indicate that the FTAB is a highly reliable instrument for a systematic observation of affective behavior in the classroom. It would also suggest that observers can be effectively trained in the use of this taxonomy. At the time of this writing a follow-up study is being conducted focusing on item validity.

The theory underlining the development of the FTAB was built upon two hypotheses:

1. A teacher who becomes more sensitive to his own value system and can observe himself and his values objectively will be sensitive to and help the student develop his own set of values.
2. The effective use of this instrument will produce a threat-free environment conducive to increased creativity on the part of the individual student rather than forcing the teacher's own value structure upon the student.

The initial study using the FTAB has clarified these hypotheses and has provided new insight into affective behavior.

Advantages and Implications

The FTAB is designed to produce most, if not all, of those measures described in the Krathwohl taxonomy. For the most part, category designations and definitions have been retained, but in certain instances individual categories have been modified to reduce overlap

between categories. Probably the greatest advantage to the FTAB is that it provides direction to the learning process. It does this by providing terminology that is clear and meaningful. It is anticipated that the objectives classified in the observational instrument will provide for the learner those kinds of behaviors expected of teachers and, in addition, provide for them the direction and framework to assist in the acquisition of these skills. It is perhaps naive to hope that the FTAB can reach this ideal because of the difficulties involved in using language to communicate, but the attempt is made to provide direction to this objective insofar as affective behavior in the classroom is concerned.

A second value to be derived from the FTAB would be to provide a convenient vehicle for students and teachers for describing their behavior and pointing out to them those areas that need development. If evaluation is to be meaningful, then it must take the form of self-analysis. This instrument can provide the framework for learners to look at their own behavior and react accordingly.

Third, by working with this instrument it may be possible to discover some of the principles of ordering and/or classifying behaviors. This ordering could provide useful information leading toward a theory of learning and instruction applicable for classroom use.

There is adequate reason to assume that teachers need to be trained to identify some of the more subtle and uncommon types of student and teacher behavior. Until they become aware and sensitive to a variety of behaviors, they may neither have the skill to identify nor the capability to produce these more uncommon forms of teacher-student behavior.

Summary

Those of us who have been trying to understand the teaching act have been drowned with the amount of information that is available. The problem seems to be to discover what the information means and where it fits. The benefit of the observational system is that it provides a scheme for the theoretical construct and in doing so gives functional data that can be studied and then operationalized. It does this by permitting the learner to analyze and evaluate his own behavior; a behavior that has been defined and dissected into its basic components. The system permits the learner to examine his own theory and to make judgments. It is immediate and gives feedback.

We need to know more about the teaching act. The position of this paper has been to encourage the investigator in pursuing his course and hopefully providing some guidelines to follow. We need to continue the search and we welcome those who desire to help us discover some answers.

USING SYSTEMATIC CLASSROOM OBSERVATION INSTRUMENTS FOR CURRICULUM BUILDING

Athol B. Packer

Across our nation thousands of public schools are engaging millions of children in learning tasks. We are aware of the importance of having a meaningful and effective curriculum for these children if they are to be equipped for life in our complicated technological society.

Worthwhile learning experiences for students in the schools do not just happen, they must be planned. The intent of this paper is to suggest that teachers and others who plan curriculum experiences can be significantly aided in their work by using systematic classroom observation instruments.

Teachers currently plan curriculum in a variety of ways. Some follow the text and its teacher's manual in a slavish manner. Such instructors assume that the material presented has been well planned and will benefit the class. Other teachers plan at least part of the learning tasks with children, feeling that pupil interest should be considered. At least one teacher in my acquaintance uses last year's lesson plan book to write this year's book. The curriculum in her class is an ever recurring one, originally planned several years ago. Each of these approaches to curriculum planning no doubt has its advantages. However, using systematic observation instruments as an aid in planning also needs to be seriously considered.

THREE SYSTEMATIC OBSERVATION INSTRUMENTS FOR CURRICULUM PLANNING

At the present time, teachers and administrators in several Florida counties are being trained in the use of three classroom observation instruments: The Florida Taxonomy of Cognitive Behavior, The Teacher Practices Observation Record and the Reciprocal Category System. They are being encouraged to use them for lesson planning as well as for observing teachers and students. A brief description of each of these instruments and how it can be used in curriculum planning follows.

The Florida Taxonomy of Cognitive Behavior

The Florida Taxonomy of Cognitive Behavior[3] is an instrument developed by Bob Burton Brown, Robert Soar, and others under Brown's leadership. This instrument draws heavily from Bloom's cognitive taxonomy[1] and upon N. M. Sander's Classroom Question: What Kind.[5] The Florida Cognitive Taxonomy lists some fifty-five types of behavioral acts at seven cognitive levels. The seven major categories of cognitive or thinking behavior described by this instrument are: memory, translation, interpretation, application, analysis, synthesis, and evaluation. Because this taxonomy contains fifty-five descriptive statements within these seven categories, the teacher has available many suggestions for learning goals, activities, questions, and problem situations to include in a curriculum unit.

Teacher Practices Observation Record

The Teacher Practices Observation Record[2] is another instrument for systematically observing teacher behavior which can be used for curriculum planning. It is concerned with the methods of instruction the teacher

uses in the classroom. This instrument has also been developed by B. B. Brown.

The TPOR consists of sixty-two items in seven categories which describe teacher behavior. Each item identifies a much used teaching practice. Half the items denote ways of teaching in which the teacher plans, directs, and presents subject matter to the pupils. The remaining items stress John Dewey's "doing" by the pupil, and describe teacher behavior that is concerned with actively involving pupils in the process of intelligent inquiry.

Reciprocal Category System

The third instrument Florida teachers are learning to use in curriculum building is the Reciprocal Category System.[4] This instrument is a modification of the Flander's system of interaction analysis. The RCS was conceived and developed by Richard L. Ober in order to correct what some consider to be a limitation of Flander's original instrument. Flander's system has only two categories assigned to the student's talk, but has seven assigned to the teacher's talk. On the other hand, the RCS consists of nine verbal categories, each of which can be assigned to either student or teacher talk, and a single category reserved for silence or confusion. The nine categories are: Warms, accepts, amplifies the contributions of another, elicits, responds, initiates, directs, corrects, and cools (or formalizes) the climate. With these nine descriptive categories for student or teacher talk the curriculum planner has many suggestions available regarding ways of guiding the verbal behavior of the class.

PLANNING CURRICULUM WITH THE THREE OBSERVATION SYSTEMS

To see how these three observation systems can be used in curriculum planning, let us look at an actual teaching situation. Recently in a Florida school, I observed a fifth grade class which was studying a chapter on the Arkansas River Valley area. Each of the thirty pupils had a copy of the same social studies text on his desk. They had been assigned the task of reading the chapter, and were now discussing it. During the discussion one of the boys mentioned he had read about the water hyacinth problem which currently exists in the nearby St. Johns River and other Florida waterways. Some of the other children eagerly told what they had seen and heard about the hyacinth situation. They also mentioned another weed which is clogging streams and killing fish. One boy volunteered to bring a water hyacinth to school. The teacher reluctantly told him that he could. Later she apologized to me for letting the children digress from their discussion of the Arkansas Valley area to talk about a local river problem. I tried unsuccessfully to assure her that she had not hindered her student's learning.

In order to provide additional background information I should mention that the school these children attend is in a coastal city of Florida. A river harboring dozens of shrimp boats flows through the town and into the nearby Atlantic Ocean. The St. Johns River, itself, is only a few miles away. In one of the local shipyards a tuna boat is being built for a fisherman from Oregon. When his boat is finished he will sail it through the Panama Canal and up to his home port on the Columbia River.

Planning with *Florida Taxonomy*

For the sake of our discussion we shall assume that our teacher went home that night and decided to plan a unit of study on the St. Johns River Valley. Like most curriculum designers she would feel the necessity of jotting down some ideas in the areas of unit objectives; activities or experiences to accomplish the objectives; and some methods of evaluating the learning accomplished by her pupils. If she had the Florida Taxonomy of Cognitive Behavior[3] before her she could first use it to develop some unit objectives. The seventeen items in level one of the taxonomy would suggest several possible types of goals regarding the acquisition of knowledge or facts, and ways of dealing with specific information at the memory level.

As our teacher glanced down the "knowledge" or memory level items, number eight "Cites rule," caught her eye. This item appeared to be the least interesting and thereby the most difficult to teach. Her question was, "How can I trigger that type of behavior?" That is, what kind of questioning or learning activity would be interesting enough to move the group to learn and later be able to "cite a rule?" since learning rules was usually a painful process? The task of rule teaching looked like a real challenge. She knew she could teach simple rules like the phonic double vowel rule: "When two vowels are together in a word, the first usually gives its long sound and the second is silent." She had an idea that learning rules like this was helpful, but she knew that their excitement and interest rating for 10-year-olds was about .01 on a 4.0 scale. She would have to develop something more appealing to the children, and something related to the unit on the St. Johns River area. She remembered a recent incident in which some of the boys had shown

little regard for the principal's P.A. announcement about the need to follow the school rules concerning bike riding on the playground, and crossing the street where the crossing guard stopped the traffic. Perhaps they needed a little meaningful emphasis on the currently popular national theme of "law and order." At least she could try. She knew that the children did have some respect for rules because of the way they argued about games on the playground. Why not tie the school rules problem to a broader study of the ways that people in social groups (communities) make rules or laws to guide or regulate the way people act so they can live together in harmony. In fact there might be some rules and regulations that the pupils already knew something about.

The next idea that occurred to the teacher planning this new unit was that three of the boys' fathers worked on shrimp and fishing boats. Why not use the boy's interest in boats and fishing along with the hyacinth problems as a starter in helping them become familiar with a variety of classes of rules and regulations. She could start with a review of soccer rules before a physical education period. Later she could begin a discussion of the fishing industry in their town; and during the discussion ask if the students knew of any rules or laws regarding fishing or shrimping. Can the local fishermen catch anything they want at any time of the year? And what does a fisherman have to do to be able to catch and sell fish? Are there any other rules or laws about boats and how to handle them. Who makes the rules and laws? As the discussion progressed, the children could be asked how they might find the answers to some of these questions. In this situation the boys would already know some of the answers and might suggest that their fathers could help

them. At this point planning could begin with the pupils for several experiences leading to an understanding of the St. Johns River area, as well as to a knowledge of rules and regulations involved in commerce on the waterways. A trip to the wharfs and boats or even visits by the fishermen in the class could be exciting events. Conservation officers and Federal Fisheries and Wildlife personnel could be contacted and invited to class. In all these activities the need for rules and regulations for fishing and marine navigation could be the focal point for further study regarding many other classifications of rules or laws which govern man's life in an interdependent society. Areas such as food and drug laws, traffic laws, firearm laws, hunting and fishing laws, etc., could be considered if the group chose to pursue them. All this as a result of "triggering" a number 8 on the Florida Taxonomy.

A second possible cognitive curriculum experience might evolve if the teacher were to plan to elicit a #12 on the taxonomy, "Names classification system or standard." The reason for seeking this type behavior would be the children's interest in the conservation department's various approaches to eliminating the water hyacinth nuisance from the state's waterways. Some of the boys were aware that various approaches had been used to kill these plants. They had mentioned herbicides and a machine to shred the plant to make a compost to use in horticulture work. They had also mentioned another underwater weed that was clogging streams and choking out the fish. Part of the unit study could involve classifying the various procedures for eliminating the plants, including the types of herbicides used and some of the mechanical approaches experimented with.

In essence the Florida Taxonomy could be a constant source of ideas for the teacher in planning daily activities and units of study. However, one of the major functions of this instrument in curriculum planning is to help the teacher engage her students in activities which require thinking at many cognitive levels, besides the memory or first level. The items discussed here were drawn from level one, the knowledge or memory category to indicate that learning even at this level can be vitally interesting and pertinent. In order to elicit higher order thinking from the pupils a teacher can refer to behavioral items listed under levels two through seven, and then plan learning tasks as the teacher above did to elicit the desired student cognitive behavior.

Planning With the Teacher Practices Observation Record

The Florida teacher planning a unit of study centered on the St. Johns River could review the items in the Teacher Practices Observation Record to determine additional methods available for working with the children. She could ask herself if she is organizing the learning around the pupils' own problems or questions about the river environment. Is she also involving pupils in uncertain or incomplete situations where they have to struggle for an answer? Will she encourage the children to suggest additional or alternative answers to certain questions and to guess or hypothesize about the unknown or the untested? How can her pupils be helped to search out solutions to problems so that they can support their answers or opinions with evidence?

Will she encourage her learners to evaluate their own work, and will she give them time to sit and mull over some of the ideas they have encountered?

In regard to the individual differences of her students, the teacher can refer to area F, Differentiation, on the TPOR and consider ways to permit different pupils to vary the learning tasks according to their needs, interests, and abilities. Will some pupils be able to work independently on what concerns them most; and will she evaluate the work of different individuals by different standards? For example, will everyone of them have to write a report about transportation or the water hyacinth problem on the St. Johns River, and then have it graded according to group standards?

A specific example of using the TPOR for curriculum planning would be for the teacher to decide to use teacher practice #18 under category B, NATURE OF THE PROBLEM. Item 18 reads, "Teacher emphasizes distressing or ugly aspects of topic." Many teachers would ordinarily avoid this method of teaching, feeling that it might be anxiety producing or too controversial in nature for their pupils. Our teacher, developing the unit of study on the St. Johns River area could plan experiences in which the children would encounter ugly or distressing facts. They might learn about the damaging side effects to animal and human life when herbicides are used to kill the hyacinths. Biologists find that fish and other marine animals are destroyed in the process. While studying the work of the fishermen, they could be made aware of the possible dangers including death, to which fishermen are liable. These and other rather unpleasant aspects of the topic could be included so that the students learn to face or recognize the presence of some negative realities of life.

The RCS and Curriculum Planning

The Reciprocal Category System instrument could also be used in curriculum planning by our hypothetical teacher to consider ways of guiding verbal behavior in the classroom. In using the RCS, however, the teacher must first make some value judgments about classroom verbal behavior. Does she believe that:

1. Verbal behavior should be shared by pupils and not teacher dominated? That is, should discussions be guided in a non-directive manner?

2. The classroom needs to be as nearly free of tension and threat as possible so that pupils are willing to speak?

3. Pupils' ideas and information must be elicited and accepted?

One interesting way of using the RCS in curriculum planning would be for the teacher to decide that in a class discussion she would function non-directively. That is, she would refrain from suggesting ideas and telling or directing the pupils regarding what they should do, think, or feel. She would deny herself the use of categories 3, 5, 6, 7, 8, and 9; which represent respectively 3 - "amplifies the contribution of another;" 5 - "responds" by giving a direct answer to questions; 6 - "initiates" or presents facts, information, and/or opinion; 7 - "directs;" 8 - "corrects;" and 9 - "cools" or formalizes the climate. Each of these forms of verbal behavior would be withheld by the teacher. The only verbalization she would permit herself would be categories 1 - "warms" or informalizes the climate with praise and encouragement of pupil's behavior; 2 - "accepts" the action behavior etc. of pupils; and 4 - "elicits," that is, asks a question or requests information. By guiding the discussion in this manner, the teacher would be encourag-

ing the maximum in pupil response or contributions, with the absolute minimum of teacher viewpoint being injected. For most right handed teachers, denial of the RCS verbalizing categories 3, 5, 6, 7, 8, and 9 would be the same as cutting off their verbal right arms. What a revelation of pupil ability to contribute might occur as a consequence.

The teacher probing for new ways to guide student thinking and discussion could also experiment with using a variety of combinations of the RCS verbal categories. Comparisons could be made of the quality and quantity of pupil verbal behavior elicited by the differing combinations. One of the valuable contributions using the RCS for curriculum planning can bring the teacher is to provide specific descriptions of ways to function in classroom discussions.

Summary

In summary, then, curriculum building can be measurably enhanced if teachers learn to use the three classroom observation systems discussed. The Florida Taxonomy of Cognitive Behavior can help teachers plan activities that will involve pupils in thinking at more levels than the memory level alone.

The Teacher Practices Observation Record can aid the teacher in planning lessons which will get the pupils actively involved in doing things which are of interest and consequence to them. The emphasis here is on stimulating pupils to think reflectively and to develop the attitudes and skills required for problem solving through intelligent inquiry.

The Reciprocal Category System can aid the teacher in planning verbal interaction activities which encourage pupils to intelligently and freely express their ideas and feelings. By tape recording and evaluating discussion sessions, she can improve her guidance of verbal

behavior in her classroom.

If educators are interested in improving the happenings in classrooms across the United States, systematic classroom observation systems should be seriously considered as curriculum planning aids.

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SYSTEMATIC OBSERVATIONAL TOOLS AS FEEDBACK FOR TEACHERS IN MODIFYING THEIR CLASSROOM BEHAVIOR

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There is growing reason to question the validity of the supervisory conference as it has traditionally been carried out as a device for increasing the skill of the student teacher in training. Teaching competence has often been looked upon in a folklorish way by many teachers, researchers, and supervisors. That is, ideas and methods appearing to have been successful with one generation of teachers were simply passed on to another. The methods were seldom subjected to any type of rigorous examination. According to folk lore, the traditional supervisory conference has been primarily an evaluation session; however, work of Michalak (21) indicates that the supervisory conference is much more akin to a social casework interview than a teaching situation.

Systematic observation is currently being used to provide feedback to the student teacher on his teaching behavior. A model of the supervisory conference using this sort of data, in contrast to the former view of supervision, is presented in Figure 1.

With respect to Purpose (Element 1 in Figure 1), one author in 1932 stated that in the supervisory conference "the student's efforts to carry out the work of teaching are analyzed and evaluated and attempts are made to correct wrong procedures and to strengthen and to develop these skills and abilities which have been initiated." (12) Emphasis

Figure 1

Two Styles of Supervisory Conference

Elements	Former Supervision Model	Emerging Supervision Model
1 - Purpose	1 - To point out the right from wrong way of teaching	1 - To create a change in behavior and cognitive understanding of one's teaching
2 - Process	2 - Evaluating	2 - Problem solving
3 - Role	3 - Evaluator	3 - Facilitator
4 - Supervising Instrument	4 - Rating Scale (if any)	4 - Systematic observation
5 - Stated Objectives	5 - General in nature	5 - Specific and stated in behavioral terms
6 - Universe of Discourse	6 - Descriptive terms, meant different things to different people	6 - Technical terms, behaviorally stated language used by researchers, supervisors and teachers, all having same meaning

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is clearly placed on improving the teaching skills of the student teacher by direct action of the supervisor. It is assumed that he points out faults and the student teacher will implement correct teaching procedures to replace those that are "wrong." The element of purpose is quite different in the emerging supervision model. In developing the emerging supervision model, Michalak studied the purposes of other dialogue groups, such as those found in the psychiatric interview, the social casework interview, guidance and counseling interview, group discussion in speech and communication. In each case, the stated purpose of each dialogue group was to create a change in behavior and also in understanding.

It is interesting to compare the similarity of remarks of student teachers in the 1960's and student teachers of 1914. When examining the elements of Process and Role (Elements 2 and 3 in the Former Supervision Model) these comments were made by student teachers in a survey of Wisconsin Normal Schools: "Complaints from students that critic teachers criticize without making clear how to correct the defect pointed out were heard in every school. Student teachers frequently have no means of knowing definitely what their teaching faults are. Criticism and suggestion by the critic teachers are vague and indefinite; they fail to point out how defects may be remedied." (21) Trimmer (33) cited reports from student teachers of the 1960's "talking back" about their student teaching conferences who mentioned these deficiencies: "lack of constructive criticism, no regular conferences, no suggestions as to methods and techniques, and freedom but no guidance."(33) One can deduce from these remarks of student teachers from the period of 1914 to the 1960's that the failings of the Former Supervision Model continued unchanged, especially in terms of the first three elements. The evaluation aspects were heavily weighted. It does not appear that much improvement has been made from this evaluative approach in the elements of purpose, process, and role.

Problem Solving (Element 2) in the Emerging Supervision Model is alluded to by Olsen (28) when he suggests that supervision may be thought of as teaching. Since much time is spent in supervisory conferences, it may be inferred that if the objective of the conference is to create a valuable teaching-learning situation, then the conference ought truly to be a problem solving situation rather than an evaluating

session. To reinforce this view, Bennie (5) states that a student teacher's self-analysis of his teaching is more beneficial to him than the supervisor's analysis.

It is significant at this point to consider that in the Problem Solving element, the supervisor may become a facilitator in which he provides ways in which the student teacher may better view his teaching behaviors. The research of Blumberg, Weber, and Amidon (7) about directness and indirectness of supervisors in supervisory conferences with teachers indicates that "the critical variable on the part of the supervisor that affects his perceptions of the productivity of his supervision is his perception of the emphasis he puts on indirect types of behavior when he interacts with teachers." This characteristic of indirectness implies that a supervisor is playing the role of a facilitator rather than evaluator because of his indirectness that facilitates the teacher's making judgments about her teaching behavior.

The rating scale (Element 4) as historically used in supervision was studied by Medley and Mitzel (20) as a measure of teacher effectiveness. Their study raises a question about a basic assumption of the supervisory conference. Presumably, if the conference is to be useful in increasing the skill of the student teacher, then the supervisor must be able to recognize more as contrasted to less effective teaching when he sees it. Medley and Mitzel reviewed all the studies they could find in which ratings of teacher effectiveness, made by administrators or supervisors, were related to any kind of objective measure of growth of pupils. The consistent finding across these studies was that the relationship between ratings of teacher effectiveness and measures of pupil

growth was essentially zero. In summarizing, they comment:

> "Perhaps it is a bit unreasonable to expect a supervisor to tell how much a class is learning just by looking at it. The notion that he can do so seems to be based on two assumptions: that there is a pattern (or set of patterns) of behavior exhibited whenever optimum pupil learning takes place, and that the supervisor can recognize this kind of behavior when he sees it....
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> "If there are uniform ways in which teachers and pupils behave whenever the pupils are growing in reading skill, they are not readily apparent to reasonably sophisticated classroom visitors....
>
> "The problem of relating behavior of teachers to effects on pupils is crucial not only to further research in teacher effectiveness, but to the future of teacher education itself. If the main objective of the professional part of teacher education is to teach teachers how to teach, it is highly desirable (to say the least) that clear-cut research evidence be obtained showing how the teacher must teach in order to bring about optimum pupil growth, and that such findings be made a part of every teacher's preparation. The amount of research, completed or under way, which can yield such evidence is, to repeat, astonishingly small." (Pp. 244-245)

Morrison and Dixon (23) found that a systematic observation instrument, in contrast to a rating scale, provided a definite focus and structure for the supervisory conference. Systematic observation instruments and "scoring sheets" furnish objective and precise references around which the supervisory conference may be built. They give a basis for planning the strategy as well as developing the agenda for the conference .

Stated objectives (Element 5 of the Former Supervision Model) contained the following type of remarks: "a student teacher's need to self-evaluate," "to develop the ability in understanding the teaching-learning process," and "to acquire problem solving skills." (Morrison and Dixon, 1964; Milner, 1954; Curtis and Andrews, 1954) (23, 22, 10)

These are fine objectives and are suitable for all persons, in all places, at all times. However, what is more relevant is to determine the specific skills acquired in problem solving and to what degree the student teacher has reached a minimum of competency with each of those skills. This leads into the Emerging Supervision Model in which objectives become more precise and are formulated in behavioral terms, in order to determine the degree to which the objective is, or is not, achieved. If the superordinate goal of supervision is the improvement of instruction, we need to be able to identify systematically and accurately what gains have been made, if any, and to what degree, in the supervisory practices that we engage in. Stating our intents in behavioral terms helps to meet this desired goal at least in the area of assessment (measurement). The same advantage enjoyed by systematic observation as a research tool may well apply to its use in the supervisory conference.

With respect to the Universe of Discourse (Element 6), statements parallel to those for Element 5 could be made. As desired outcomes have become more behaviorally stated, so, too, have the descriptions of procedure.

Two lines of evidence support the conclusion that systematic observation does produce changes in teacher behavior which is supportive of pupil growth. The series of studies to date which have studied relations between teacher behavior as measured by systematic observation and pupil growth have consistently found significant relationships. Flanders (11) reports several replications of the finding that indirect teacher behavior as identified by his system is associated with in-

creased pupil subject-matter growth and more favorable attitudes toward school. LaShier (18) and Amidon and Flanders (2) have also replicated this finding. Furst (13) in a re-analysis of data collected by Bellack and associates (3, 4) demonstrated significant relationships between teacher behavior and pupil subject-matter growth. Perkins (29), in a study using an instrument of his own, also found significant relationships between teacher behavior and pupil subject-matter growth. Soar (31, 32) has reported significant relationships between teacher behavior as identified by two systems for observation, and a variety of measures of pupil growth including subject-matter, personality, creativity, and attitude.

With respect to the use of systematic observation as a training device, Hough and Amidon (15) quote Combs (9): "Modern psychology tells us that it is only when knowledge becomes meaning that behavior is affected. If it is meaning that affects human behavior, then it is meaning with which educators must deal." They continue, "If this statement is true, then the key to changing the behavior of teachers seems to lie in finding ways of helping teachers discover personal meaning in cognitive knowledge regarding the teaching-learning process...." (P. 307) "Further, the richest environment of stimuli is of little use to a person if he is unable to perceive accurately the stimuli that characterize the environment." (P. 308) In this study the investigators were concerned with finding

> "a means by which student teachers could a. gain knowledge about principles of teaching and learning, b. make use of such knowledge in a situation characterized by personal meaning, c. get immediate feedback regarding the effects of their behavior in the classroom, and d. discover for themselves more effective patterns of teaching behavior." (P. 307)

The results of this study seemed to indicate that the experimental group using Flanders Interaction Analysis System as compared to the control group using a conventional approach was far more effective in changing attitudes and understandings related to effective teaching because of the feedback obtained from interaction analysis.

Furst's study (13) gives additional relevancy to Hough and Amidon's work. She had raised questions about their study such as the acceptance of pencil-and-paper attitude survey and ratings made by college supervisors of student teachers. She stated that the opinions, philosophies and objectivity of college supervisors differ significantly when observing student teachers teach. Her study was designed to observe classroom behavior of student teachers by a trained observer using an objective instrument for recording behavior. The verbal teaching behavior of students who were trained in Flanders Interaction Analysis was compared to the verbal teaching behavior of student teachers who had been more conventionally trained. One of the major findings of the study once again appears to support the feedback theory; that is, those students trained in Flanders Interaction Analysis seem to reveal greater changes in behavior and understanding about their teaching behavior than the conventionally trained students. (34)

The effect of feedback in modifying a teacher's behavior was given further support by Hough and Ober (16) who stated:

> "It may be assumed that when the skill of interaction analysis (systematic observation) is learned, it gives the teacher a feedback mechanism in the form of a category system that he may use to become more sensitively aware of his own teaching behavior. Interaction analysis seems to provide the teacher with a cognitive organizer

> to more accurately interpret the effects of his behavior. If interaction analysis in fact functions as a feedback mechanism, then it has the potential to act as a mechanism for the reinforcement of behavior."

Ober (27) more recently has stated that as a teacher obtains feedback from a systematic observational instrument, it helps a teacher in two ways: first, he becomes more aware of his classroom teaching behavior; and, second, it assists him in controlling his classroom teaching behavior in ways that are consistent and congruent with what he "knows and/or believes to be effective teaching practice." (p. 9)

Other studies (17, 35, 24, 19, 27) also support the usefulness of systematic observation data as feedback to the teacher. The most extensive of the recent studies is that of Amidon (1). Other systematic observation instruments, such as the Teacher Practices Observation Record (TPOR) (8) and Florida Taxonomy of Cognitive Behavior (FTCB)* have also been used effectively in providing teachers with feedback about their teaching behavior in other dimensions. The TPOR measures the degree to which a teacher reflects John Dewey's experimentalist point of view in his everyday classroom practice, and the FTCB attempts to identify differing levels of intellectual activities based on the Taxonomy of Educational Objectives (6) as revised by Sanders (30).

With the addition of systematic observation instruments focusing on different dimensions of a teacher's teaching behavior, the feedback provided teachers may move from simplistic attempts at modifying their behavior in only one dimension to additional dimen-

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* Brown, B.B., Ober, R.L., Soar, R.S., & Webb, J.N. Personal Communication.

sions which they believe are more consistent with their entire teaching "style," or which research shows are related to desired pupil outcomes.

Additional advantages appear to accrue from the fact that the use of systematic observation involves, on one hand, extreme simplification in that only limited aspects of the complex of the classroom are recorded; but, on the other hand, a considerable increase in sophistication in the sense that the selected aspects are recorded with considerably greater precision than would otherwise be possible, and the observation is clearly more focused. The possibility then begins to exist to make deliberate selection, either empirically or theoretically, of the dimensions of the classroom which seem relevant to observe. In this way, in time, a research base for a conception of effective teaching can be built which will be teachable.

The concept of systematic observation as a source of feedback is being extended considerably in a project now under way at the University of Florida. Dr. Ira Gordon's Parent Education Model is being implemented in a number of Follow Through programs scattered across the country. Systematic observation, employing six different instruments, has been planned as an integral part of the operation of each classroom. The data from these observations then is made available to teachers, to supervisors, and to local project coordinators, as well as being forwarded to the University of Florida. The intent of this operation is to make more objective and behavioral data on the implementation of the program available at all levels, with the expectation that teachers will have the necessary information to

upgrade the quality of their instruction, that higher levels of administration will have sounder data on which to monitor the operation of programs, and that consultants from the University will be in a better position to be helpful to teachers and to school systems on their consultant visits. Although data are not yet available on the effectiveness of this project model, consultants and school personnel express the feeling that their efforts in consultation are more focused and more effective. This appears to be a more extensive use of systematic observation as a feedback loop than the ones ordinarily discussed--perhaps more nearly to be described as a network of communication, the channels of which are represented by systematic observation data; but, at the same time, one which is only an extension, and not a change in nature. The hope is that increases in effectiveness will take place throughout the system, similar to those which have been found in the research with individual teachers.

Summary

With the introduction of systematic observation instruments, the conventional methods of supervision, such as taking notes with general remarks and using rating scales when observing teachers, will no longer suffice. Historically, supervisors used instruments such as a rating scale to evaluate a teacher's effectiveness. But research shows that the old rating scales have no relationship with pupil achievement. In light of this significant finding, it can be assumed that a need for relevant instruments that provide accurate feedback in supervision is essential.

Systematic observation instruments for supervisory practices may well meet this need. A logical format of the supervisory

conference seems to be the feedback obtained from the systematic observation instruments. If the focus of the supervisory conference is providing feedback of data obtained from systematic observation instruments, the supervisor plays a different role. He is no longer an evaluator but becomes a facilitator of change which the teacher feels is relevant. The Conference becomes more of a problem-solving than an evaluating session. Ideally, the supervisory conference provides an opportunity for supervisors to organize and classify teaching behaviors in discussion with teachers, in terms that have common meaning to both, and on dimensions that are known to be relevant to the growth of pupils. This is the movement of supervision from practices with a folklorish base to supervision with a more scientific base.

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